

Message

From: Schulman, Michael [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=35D7024F00644B3D8B5DBA4940506834-SCHULMAN, M]
Sent: 7/1/2022 9:38:01 PM
To: Lilian Abreu (abreu.lilian@epa.gov) [abreu.lilian@epa.gov]
Subject: FW: EPA comments on "Work Plan for the Indoor Air/Vapor Intrusion Removal Site Evaluation and any Necessary Removal Action"
Attachments: SigneticsFinalVaporWorkPlan2020_redline.pdf; Vapor Work Plan App C QAPP_RevD_redline.pdf

From: Schulman, Michael
Sent: Friday, May 29, 2020 10:52
To: Cynthia Woo (cynthia.woo@aptim.com) <cynthia.woo@aptim.com>
Subject: FW: EPA comments on "Work Plan for the Indoor Air/Vapor Intrusion Removal Site Evaluation and any Necessary Removal Action"

Do you have any comments on revisions?

Thanks,
Michael

From: J. Wesley Hawthorne <hawthornej@locustec.com>
Sent: Friday, May 29, 2020 10:26 AM
To: Schulman, Michael <Schulman.Michael@epa.gov>; Shau Luen Barker <shauluen.barker@philips.com>
Cc: Poalinelli, Edwin <POALINELLI.EDWIN@EPA.GOV>; Woo, Cynthia <cynthia.woo@aptim.com>; Africa Espina <guzuna@locustec.com>; Nancy-Jeanne LeFevre <LeFevren@locustec.com>
Subject: RE: EPA comments on "Work Plan for the Indoor Air/Vapor Intrusion Removal Site Evaluation and any Necessary Removal Action"

Michael:

The updated Vapor Work Plan for the Signetics Site (including all appendices) is available here:
<https://locustec-my.sharepoint.com/:b:/p/hawthornej/EelBPRLVkiZFvW01hN4FMQAB7pgCJTZUnwuvNGzl30iR9A?e=TMO4qN>

This includes revisions as described in the 17 March correspondence with EPA responses. For ease of review, redline versions of the work plan text and QAPP text are also attached.

Please let me know if you have any questions. We will discuss the initial steps for implementation at our kickoff meeting on 3 June as planned.

Thank you,

J. Wesley Hawthorne, PE, PG
President
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email: hawthornej@locustec.com

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From: Schulman, Michael <Schulman.Michael@epa.gov>
Sent: Friday, May 15, 2020 5:47 PM
To: Shau Luen Barker <shauluen.barker@philips.com>; J. Wesley Hawthorne <hawthornej@locustec.com>
Cc: Poalinelli, Edwin <POALINELLI.EDWIN@EPA.GOV>; Woo, Cynthia <cynthia.woo@aptim.com>
Subject: RE: EPA comments on "Work Plan for the Indoor Air/Vapor Intrusion Removal Site Evaluation and any Necessary Removal Action"

Hi Shau Luen and Wes,

Attached is EPA's concurrence with Locus' March 17, 2020 responses to EPA's comments on the subject Work Plan for Indoor Air/Vapor Intrusion at the Signetics Site. EPA agreed with Locus' responses on behalf of Philips, other than for a point of clarification on the Outdoor Air Evaluation. Please submit a final Work Plan to EPA **within 14 days** incorporating Locus' March 17, 2020 responses and EPA's point of clarification on the Outdoor Air Evaluation.

Per the ASAOC, with the approval of the subject Work Plan the next step will be the implementation of the Work Plan within 21 days. EPA expects that mitigation measures will need to be incorporated into the field work to address COVID-19. To address COVID-19 and to refine project expectations and to better work together I would like to have an implementation kick-off meeting within the next 14-days, if you can set that up?

Thank you,
Michael

Michael Schulman
Remedial Project Manager / Superfund Division
US EPA, Region 9
75 Hawthorne St., Mail Code SFD-7-1
San Francisco, CA 94105
415-972-3064 (o)

From: J. Wesley Hawthorne <hawthornej@locustec.com>
Sent: Tuesday, March 17, 2020 8:29 AM
To: Schulman, Michael <Schulman.Michael@epa.gov>
Cc: Shaffer, Caleb <Shaffer.Caleb@epa.gov>; Woo, Cynthia <cynthia.woo@aptim.com>; Condit, Rose <rose.condit@aptim.com>; Africa Espina <guzuna@locustec.com>; Shau Luen Barker <shauluen.barker@philips.com>
Subject: RE: EPA comments on "Work Plan for the Indoor Air/Vapor Intrusion Removal Site Evaluation and any Necessary Removal Action"

Michael:

Attached is a letter addressing how Philips will comply with EPA's 2/27/2020 comments on the Work Plan for the Indoor Air/Vapor Intrusion Removal Site Evaluation and any Necessary Removal Action for the Signetics Site.

Please let me know if you have any questions.

J. Wesley Hawthorne, PE, PG

President

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From: Schulman, Michael <Schulman.Michael@epa.gov>

Sent: Thursday, February 27, 2020 4:40 PM

To: Shau Luen Barker <shauluen.barker@philips.com>; J. Wesley Hawthorne <hawthornej@locustec.com>

Cc: Shaffer, Caleb <Shaffer.Caleb@epa.gov>; Woo, Cynthia <cynthia.woo@aptim.com>; Condit, Rose <rose.conda@aptim.com>

Subject: RE: EPA comments on "Work Plan for the Indoor Air/Vapor Intrusion Removal Site Evaluation and any Necessary Removal Action"

Hi Shau Luen and Wes,

Attached are EPA responses to the Locus prepared response to comments and revised Signetics Site *Work Plan for the Indoor Air/Vapor Intrusion Removal Site Evaluation and Any Necessary Removal Action*, dated February 3, 2020. Philips does not need to submit another revised Work Plan; however, please submit a response letter back within 21 days addressing how Philips will comply with the EPA responses.

Please feel free to call or email me to schedule a meeting date if you would like to have a meeting before finalizing a response.

Thank you,

Michael Schulman

Remedial Project Manager / Superfund Division

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Tel: 415-972-3064

From: J. Wesley Hawthorne <hawthornej@locustec.com>

Sent: Monday, February 3, 2020 2:42 PM

To: Schulman, Michael <Schulman.Michael@epa.gov>

Cc: Shaffer, Caleb <Shaffer.Caleb@epa.gov>; Woo, Cynthia <cynthia.woo@aptim.com>; Africa Espina <guzuna@locustec.com>; Shau Luen Barker <shauluen.barker@philips.com>

Subject: RE: EPA comments on "Work Plan for the Indoor Air/Vapor Intrusion Removal Site Evaluation and any Necessary Removal Action"

Michael:

Attached is a revised version of the subject Work Plan. For ease of review, this submittal includes four files:

- An updated "clean" version of the full Work Plan.
- A letter summarizing the revisions made in response to each of EPA's comments.
- A redline copy of the Work Plan text, which tracks all changes made since the 28 August 2019 submittal.
- A redline copy of the Appendix C (QAPP) text, which tracks all changes made since the 28 August 2019 submittal.

Thank you for the additional time to prepare these updates, and let me know if you have any questions about this submittal.

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From: Schulman, Michael <Schulman.Michael@epa.gov>

Sent: Friday, December 20, 2019 4:02 PM

To: Shau Luen Barker <shauluen.barker@philips.com>; J. Wesley Hawthorne <hawthornej@locustec.com>

Cc: Shaffer, Caleb <Shaffer.Caleb@epa.gov>; Woo, Cynthia <cynthia.woo@aptim.com>; Africa Espina <guzuna@locustec.com>

Subject: RE: EPA comments on "Work Plan for the Indoor Air/Vapor Intrusion Removal Site Evaluation and any Necessary Removal Action"

Hello Shau Luen and Wes,

Attached are EPA comments on the subject Work Plan and Philips' proposed approach to the outdoor air evaluation. I have also included additional comments on EPA's reporting expectations for the project. Please let me know if you have any questions or would like to go over this further. While the ASAO specifies resubmissions to be submitted to EPA within 30 days, given the holidays, please resubmit the final work plan within 45 days.

Thank you,
Michael

Michael Schulman

Remedial Project Manager | Superfund Division

US EPA, Region 9

75 Hawthorne St. (SFD-7-1)
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From: J. Wesley Hawthorne <hawthornej@locustec.com>
Sent: Tuesday, September 17, 2019 11:44 AM
To: Shaffer, Caleb <Shaffer.Caleb@epa.gov>; Shau Luen Barker <shauluen.barker@philips.com>
Cc: 'Woo, Cynthia' <cynthia.woo@aptim.com>; MORASH, MELANIE <morash.melanie@epa.gov>
Subject: RE: EPA comments on "Work Plan for the Indoor Air/Vapor Intrusion Removal Site Evaluation and any Necessary Removal Action"

Hi Caleb

Thank you for the additional comments. Here are a few potential dates for a call to discuss the outdoor air evaluation. Please let me know what would work best for your team and then I can send a meeting invite.

9/19 1pm

9/20 1pm

9/23 10am

9/24 11am

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From: Shaffer, Caleb <Shaffer.Caleb@epa.gov>
Sent: Friday, September 13, 2019 6:31 AM
To: J. Wesley Hawthorne <hawthornej@locustec.com>; Shau Luen Barker <shauluen.barker@philips.com>
Cc: 'Woo, Cynthia' <cynthia.woo@aptim.com>; MORASH, MELANIE <morash.melanie@epa.gov>
Subject: RE: EPA comments on "Work Plan for the Indoor Air/Vapor Intrusion Removal Site Evaluation and any Necessary Removal Action"

Hello Wes and Shau Luen,

Attached are comments on the work plan. The only item we'd like to discuss further on a future call is the approach to the outdoor air evaluation. Otherwise everything else looks good. Please let me know if you have any questions.

Regards,

Caleb

From: J. Wesley Hawthorne <hawthornej@locustec.com>
Sent: Wednesday, August 28, 2019 4:06 PM
To: Shaffer, Caleb <Shaffer.Caleb@epa.gov>; Shau Luen Barker <shauluen.barker@philips.com>
Cc: 'Woo, Cynthia' <cynthia.woo@aptim.com>; MORASH, MELANIE <morash.melanie@epa.gov>
Subject: RE: EPA comments on "Work Plan for the Indoor Air/Vapor Intrusion Removal Site Evaluation and any Necessary Removal Action"

Caleb:

The following documents are attached:

- Revised Work Plan for Indoor Air/Vapor Intrusion Removal Site Evaluation and any Necessary Removal Action
- Response-to-comments letter describing how each of the EPA comments below were addressed in this revision

After reviewing these updates and responses, please let me know if it would be helpful to arrange another meeting to discuss.

Thank you,

.....
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From: Shaffer, Caleb <Shaffer.Caleb@epa.gov>
Sent: Monday, July 29, 2019 3:18 PM
To: Shau Luen Barker <shauluen.barker@philips.com>
Cc: J. Wesley Hawthorne <hawthornej@locustec.com>; 'Woo, Cynthia' <cynthia.woo@aptim.com>; MORASH, MELANIE <morash.melanie@epa.gov>
Subject: EPA comments on "Work Plan for the Indoor Air/Vapor Intrusion Removal Site Evaluation and any Necessary Removal Action"

Hello Shau-Luen,

Please see detailed technical comments below on the *Work Plan for the Indoor Air/Vapor Intrusion Removal Site Evaluation and any Necessary Removal Action* prepared by Locus Technologies dated May 8, 2019. Please prepare a response-to-comments letter and submit a revised work plan to EPA within 30 days of your receipt of this e-mail correspondence. Please let me know if you have any questions.

GENERAL COMMENTS

1. As part of the pre-sampling tasks, the WP (specifically, Section 2.6) is lacking in providing potential chemicals and indoor air sources that were observed during the building surveys prior to the implementation of mitigation measures. If

this type of survey was not conducted, then it should be stated that this will be conducted and documented in the Building-Specific WP Addenda for each building.

2. The WP should state what letters and reports were provided to the building owners and on-site facilities managers. These reports include Mitigation Plans, Operations and Maintenance [O&M] Plans, Information Sheets, placards and signs. The WP should also state what communication will be provided to the building owners with updates regarding post-mitigation sampling results, O&M inspections, and any repairs or augmentations that are required. These communications include post-mitigation update letters, phone calls, and e-mail communication. All levels of communication with building owners and on-site facilities managers should be cataloged and tracked with delivery dates, then provided to EPA upon request.

3. Section 3.1.1 states that, "The vapor intrusion study area is defined by EPA as areas overlying shallow groundwater concentrations of 5 micrograms per liter ($\mu\text{g/L}$)." However, all further discussion of trichloroethene (TCE) concentrations in groundwater around the buildings uses the units of milligrams per liter (mg/L). Please convert all discussions of TCE concentrations in groundwater to units of $\mu\text{g/L}$ throughout the WP for consistency.

4. In Section 3.0, language should be included to account for any development or change in use (from commercial to residential) that may occur in the future. The WP should address what actions would be taken to work with developers regarding the design and installation of preemptive mitigation systems.

SPECIFIC COMMENTS

Vapor Work Plan:

1. Section 2.6, Page 20: Two additional sections that provide a summary of the two other commercial buildings (830 Stewart Dr. and 811 Arques Rd.) within the Signetics Site should be added to the WP. Although these two building are currently pending further VI investigation, a general summary of actions taken to date and a general plan forward should be provided.

2. Section 2.6.2, Page 20: The description of the basement usage at 440 N. Wolfe Rd. is inaccurate based on current use of the basement. During EPA oversight activities in May 2019, APTIM observed that building staff use interior, unventilated spaces as office space and a workout gym. There are also two small interior restrooms with floor drains. The basement description mentions two floor drains which is incorrect and should be updated accordingly.

3. Section 2.6.2, Page 20, 2nd Paragraph: The text mentions that a heating, ventilation, and air conditioning (HVAC) expert was consulted to evaluate the ventilation inside the Server Room at 440 N. Wolfe Dr. Please cite the name/company of the HVAC expert and any technical observations or memoranda completed by the HVAC contractor as an Attachment to this WP for EPA review.

4. Section 2.6.2, Page 20, 2nd and 3rd Paragraphs: This section should include a discussion on signage or placards that were placed near the carbon filter air purifier to notify occupants not to disturb or move the unit and to leave it "On" at all times. The placards should also provide Locus' contact information and instructions if the air purifier turns "Off" or malfunctions. Provide an example of the placard (and any other relevant signage) as an Attachment to this WP for EPA review.

5. Section 2.6.2, Page 20: A description of the air flow rate for the carbon treatment system should be added to this section. This section should specify the frequency of air exchange and when the carbon filter should be replaced.

6. Section 2.6.2, Page 19, 4th Paragraph: The discussion of the crack sealings should include a detailed methodology for cataloging cracks that records when they were sealed (numbering system), photo logs, how to identify new cracks, and what would initiate a repair of an existing sealing. This information is critical to conduct future O&M inspections.

7. Section 2.6.2, Page 19, 4th Paragraph: The text mentions that a licensed professional performed the crack sealings at 440 N. Wolfe Road. Please provide the contractor's name/company and any associated documentation (technical observations or memoranda) as an Attachment to this WP for EPA review.

8. Section 2.6.3, Page 21: This section should clarify if Locus consulted an HVAC specialist or on-site facilities manager to evaluate winter-time HVAC settings when the roll-up doors and windows are closed. The text should be revised with additional details regarding the HVAC system settings during winter time temperatures (heating/cooling, outdoor air exchange, etc.).
9. Section 2.6.3, Page 21: The text states that there is a traditional furnace unit located in the Yoga Room. During future post-mitigation sampling events, air samplers should be placed inside the Yoga Room and near the furnace components which is a potential VI pathway.
10. Section 4.1.1, Page 27: Sample locations should also be selected based on various HVAC systems that may differ from room to room within the same building. For example, the Yoga Room at 815 Stewart Dr. is an enclosed space with a separate furnace unit compared to the open-air, ventilated climbing areas in the same building. The text should be revised accordingly.
11. Section 4.1.2, Page 27: The discussion on potential pathways should be revised to include restrooms, floor drains, sinks or laundry areas with plumbing through walls or floors, and concrete floor cracks.
12. Section 4.1.3, Page 28: A description of further outdoor air investigation and monitoring to address the increasing outdoor TCE levels trends at the Signetics Site should be added to this section. Multiple Sub-Slab Depressurization System (SSDS) in addition to the existing groundwater treatment system may be contributing to the increases in TCE outdoor air levels, which significantly impacts the evaluation of indoor air results in the area. Options for further investigation include stack testing and Effluent Dispersion Modeling. This information will also be used to determine when the SSDS's should be shut off.
13. Section 4.1.4, Page 28: The text regarding sampling should be updated and revised to match DTSC's 2015 guidance on Active Soil Gas Investigation (DTSC 2015); for example, purge volume tests are no longer required.
14. Section 4.3.2, Page 31: This section should clarify if summa canisters will be individually certified or batch certified for indoor air.
15. Section 4.6.1, Page 37: The text should be revised to include the frequency of field duplicates which is not clearly stated in the text.
16. Section 4.5, Pages 34-35: "Record room temperature" should be added to the Radiello sampling process. Also, include a step for attaching signage on doors or on samplers to inform occupants of sampling in progress and to keep doors and windows (as appropriate) closed.
17. Section 4.6.3, Page 38: The statement that "laboratory blanks, laboratory control spikes, and surrogates are used to validate the accuracy of the initial instrument calibration," is incorrect and should be deleted from the text.
18. Section 5.2, Page 41: The text references an archived EPA memo which provide the short-term "accelerated response" and "urgent response" action levels for TCE. The current DTSC HHRA Note 5 (DTSC 2014) should also be cited which references these action levels.
19. Section 5.2, Page 41, 1st Paragraph: For clarity, the following sentence should be revised: "The lowest criteria listed in Table 4 will be used for comparison in this evaluation." It should be revised to: "The lowest **Tier 2** criteria listed in Table 4 will be used for comparison in this evaluation."
20. Section 5.5, Page 43: The statement, "If action levels are not exceeded in ambient or pathway air samples, then no further action will be needed," is technically incorrect. Before a "no further action" decision can be made, additional rounds of indoor air sampling, soil gas, and/or sub slab would be conducted to provide multiple lines of evidence to determine if no further action (NFA) is warranted.

21. Section 5.5, Page 43: This section states that “If indoor air concentrations are consistent with outdoor background concentrations, mitigation measures would not be effective.” Due to the increasing outdoor concentrations in the area as stated in Comment No. 13, EPA requests sampling, evaluation, and air modeling of current SSDS and groundwater treatment system vapor effluents to address the impacts of increasing TCE concentrations in outdoor air on building indoor air.

22. Section 5.5.1, Page 44, 2nd Paragraph: An additional interim mitigation measure includes the installation of one-way drains in floor drains and sinks. Also, in cases of an “urgent” response, there would be a temporary relocation of occupants until TCE indoor air levels are mitigated to below the “urgent” action level. Please update the text accordingly.

23. Section 5.5.1, Page 44: This section should discuss that O&M inspections will be conducted for all interim mitigation measures and provide a general schedule of inspections. Also, please state that the O&M Plans will be provided to building owners, facilities manager, and EPA.

24. Section 5.5.1, Page 45, General Verification/Monitoring Plan: This section should include details about the general schedule for O&M inspections of long-term mitigation systems (monthly, quarterly, annually). Also, state that the O&M Plans will be provided to building owners, facilities manager, and EPA.

25. Attachments, Table 2 and 3: Table 2 and Table 3 should provide the evaluation criteria for each chemical of concern (COC) and values exceeding the criteria should be noted.

26. Attachments, Table 4: Table 4 should include laboratory reporting limits for each method TO-17 and TO-15 to demonstrate laboratory results will meet the decision criteria.

27. Attachments, Table 4: This Table needs to clearly present which criteria would initiate urgent, accelerated, or pre-emptive response actions. The statement: “The lowest criteria listed in Table 4 will be used for comparison in this evaluation” is too vague. Alternatively, an additional table could be added which presents criteria under urgent, accelerated, or pre-emptive conditions.

28. Attachments, Table 4 - The following discrepancies were found in Table 4: • The EPA Regional Screening Level (RSL) (EPA 2019) (industrial, noncarcinogenic) for 1,1,2-trichlorofluoroethane or Freon 113 is 22,000 $\mu\text{g}/\text{m}^3$

- The Regional Water Quality Control Board (RWQCB) Environmental Screening Level (ESL) (RWQCB 2018) (commercial, noncarcinogenic) for 1,1,1-trichloroethane is 4,400 $\mu\text{g}/\text{m}^3$

- The RWQCB ESL (commercial, noncarcinogenic) for trichloroethene is 8.8 $\mu\text{g}/\text{m}^3$

- The Agency for Toxic Substances and Disease Registry (ATSDR) Minimal Risk Levels (MRL) (ATSDR 2019) (intermediate and chronic) for trichloroethene is 2 $\mu\text{g}/\text{m}^3$

- The RWQCB ESL (commercial, carcinogenic) for trichloroethene is 3 $\mu\text{g}/\text{m}^3$

Quality Assurance Project Plan (QAPP):

1. Section 2.1.7, Quality Objectives and Criteria for Measuring Data: This section is missing the outputs from the systematic planning, data quality objectives (DQO) process. It only includes the measurement performance criteria. Please include the DQO process in this section.

2. Section 2.7.1 and 2.7.2, Documents and Records: This section should be updated to include a statement that all project records will be made available to the EPA, upon request, for EPA’s Administrative Record Files.

3. Section 3.1.3, Field Sampling: Per the WP, field sampling may also include soil gas and/or sub slab sampling for decision making purposes (should be discussed in DQO process). This section only discusses indoor air sampling.

4. Section 3.5, Quality Control Samples: Please clarify how the Project Quality Assurance Officer (PQAO) will confirm the problem did not affect the integrity of the rest of the samples if any quality control sample falls outside the acceptable range. What criteria will be used?
5. Section 3.5.1, Quality Control Samples: The last sentence in this section, "Laboratory control samples are used to validate the accuracy of the initial calibration of the instrument," is incorrect and should be deleted from the text.
6. Section 5.1, Data Review, Verification and Validation: Please revise the text to specify what guidance will be used to determine how or if data need to be qualified due to analytical or field deficiencies as no criteria are currently specified. Please refer to EPA's National Functional Guidelines (NFG) for Organic Data Review (EPA 2017) for examples.
7. Section 5.2, Verification and Validation Methods: This section should also describe the data validation guidelines that will be used by the data validator (see comment above).
8. Section 5.3, Reconciliation with User Requirements: This section references the NFG guidelines only for independent, third-party full validation. These same guidelines should be applied to Sections 5.1 and 5.2 by the PQAO for initial assessment (Stage 2A) of the data.
9. Attachment H-1: The Eurofins AT procedure for TO-17 attached is for Tenax-TA tube and not for RAD 145 analysis. Please attach the correct laboratory procedure.

Regards,

Caleb Shaffer, MS, MBA | Manager
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